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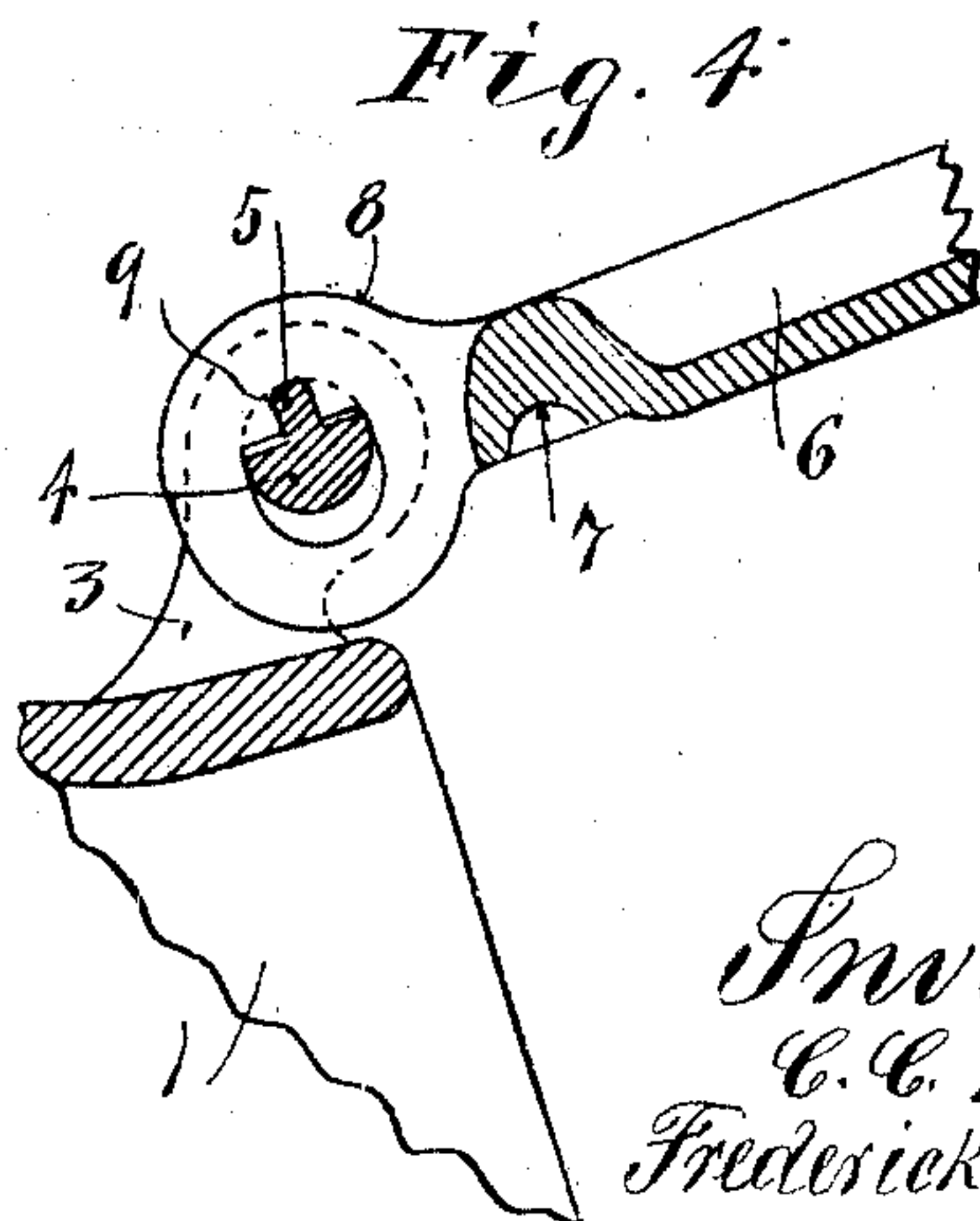
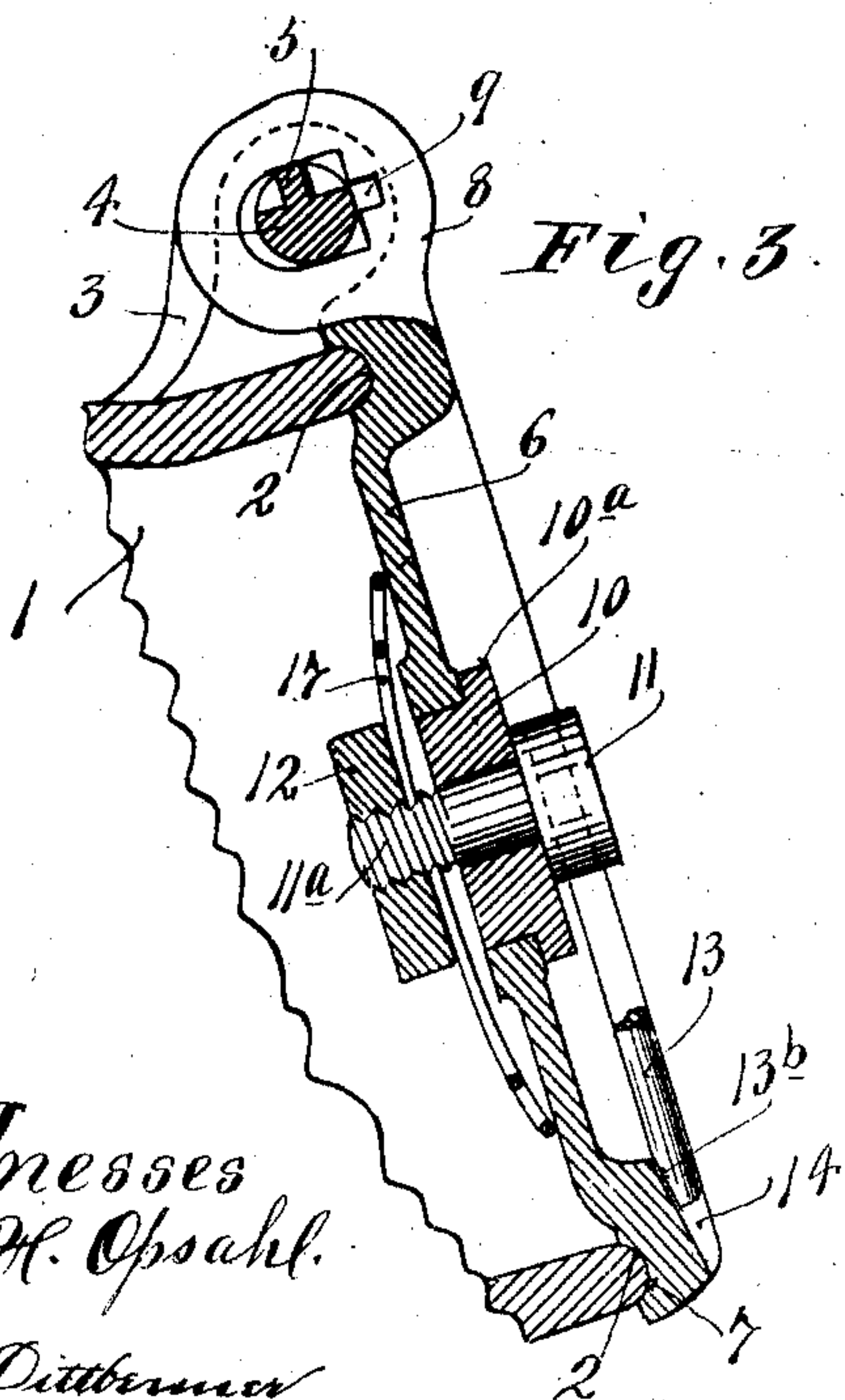
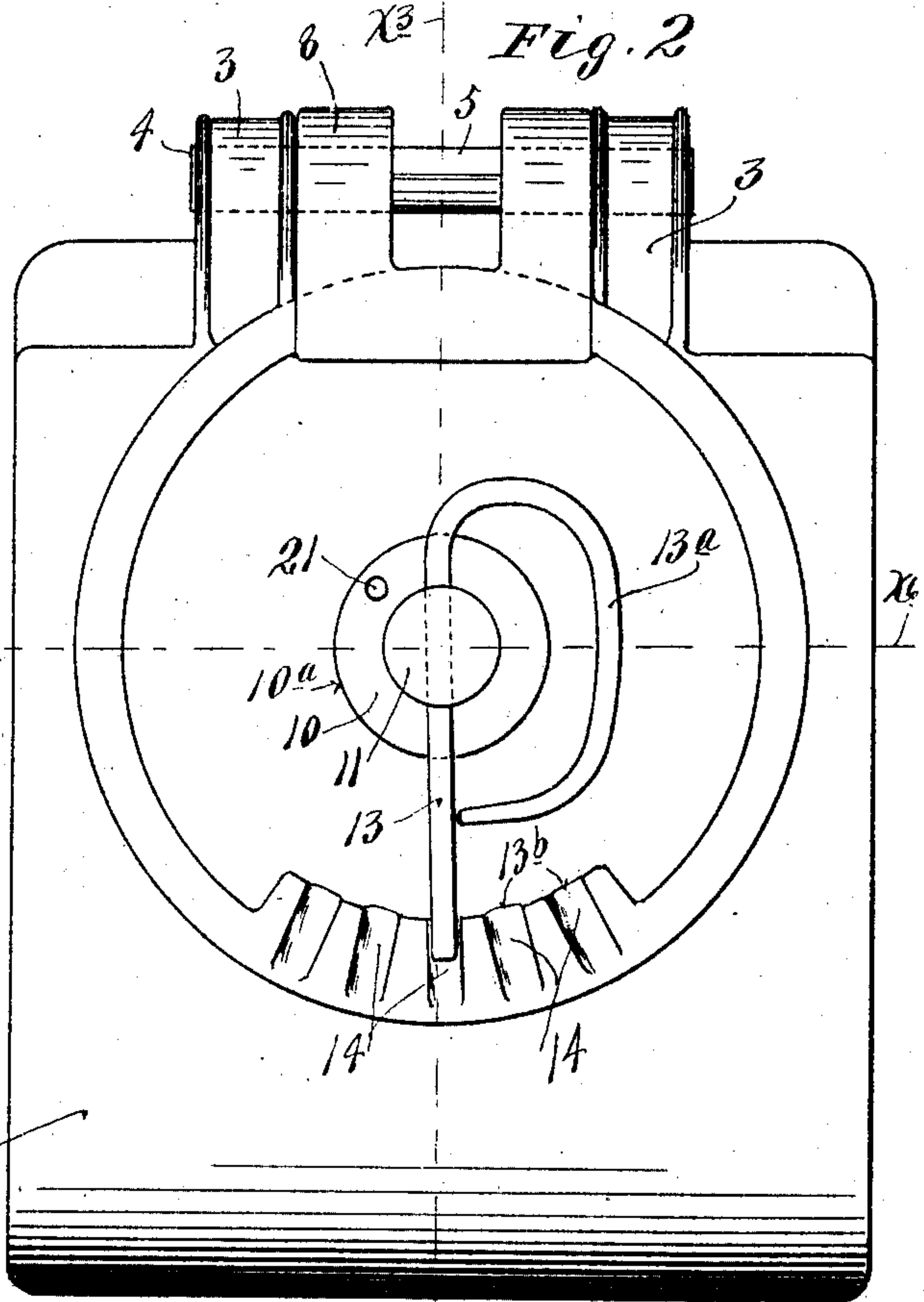
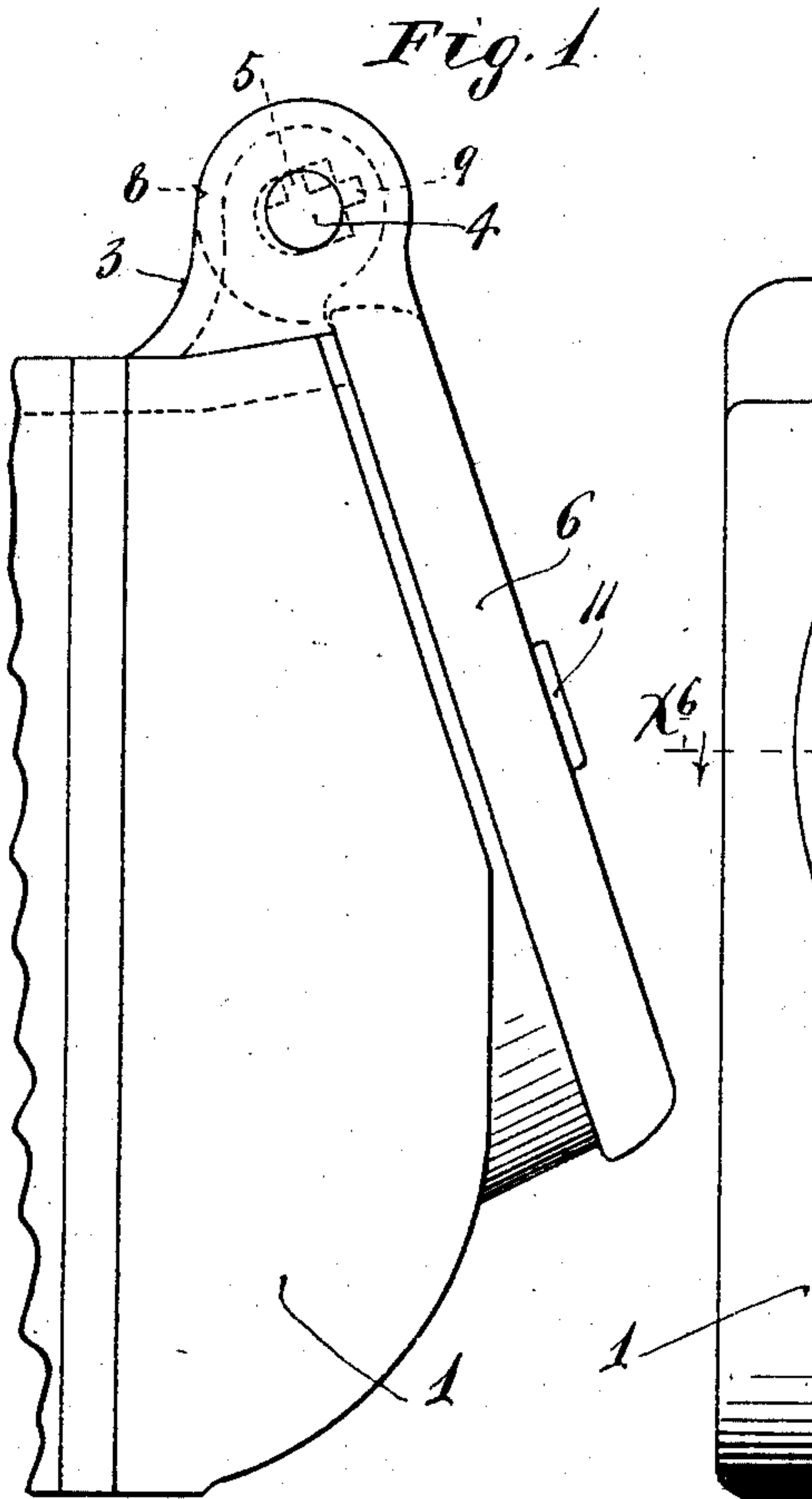
PATENTED FEB. 18, 1908.

C. C. BARCLAY & F. HACHMANN.

CAR AXLE BOX LID.

APPLICATION FILED APR. 24, 1907

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

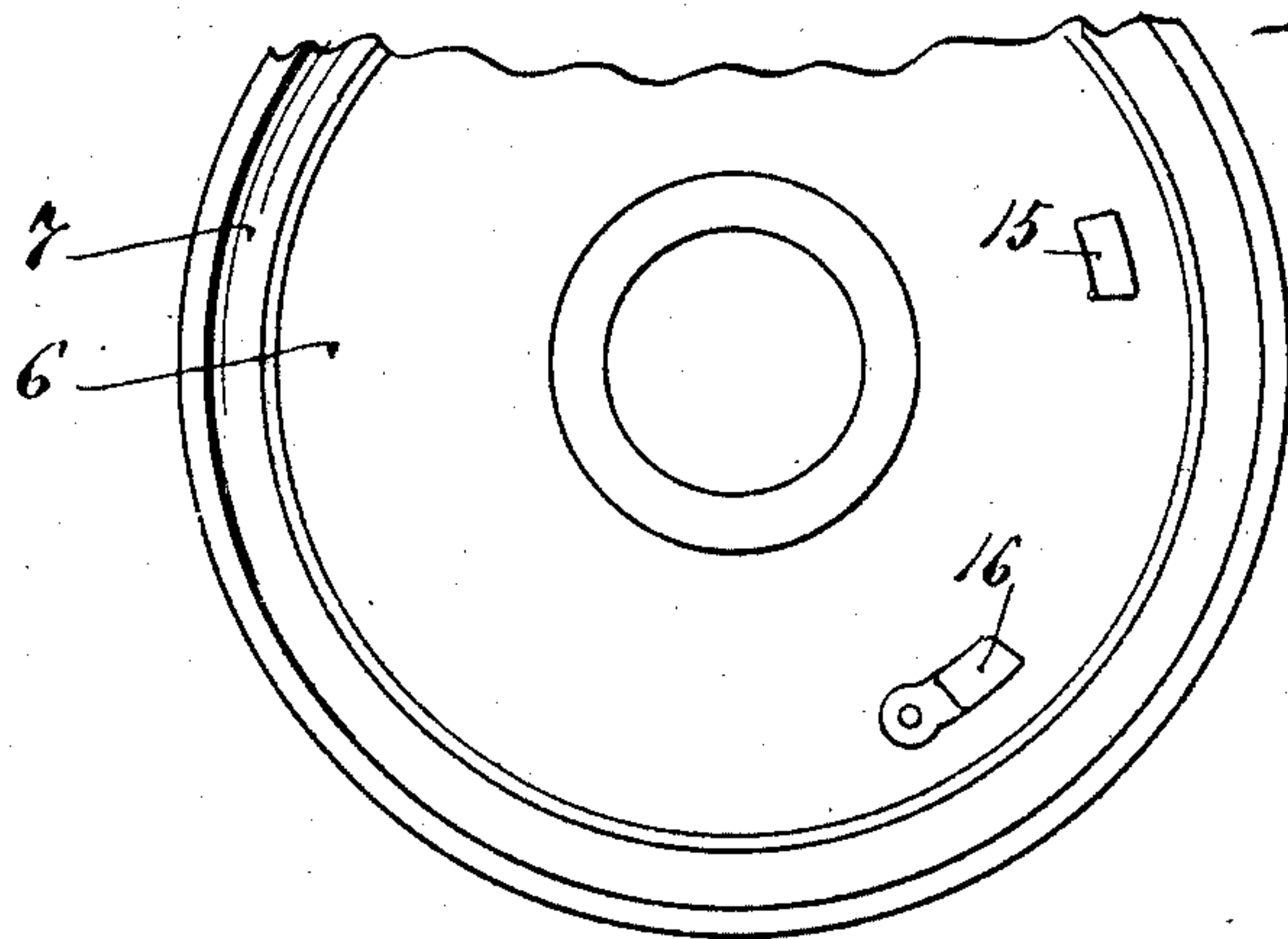


Fig. 8.

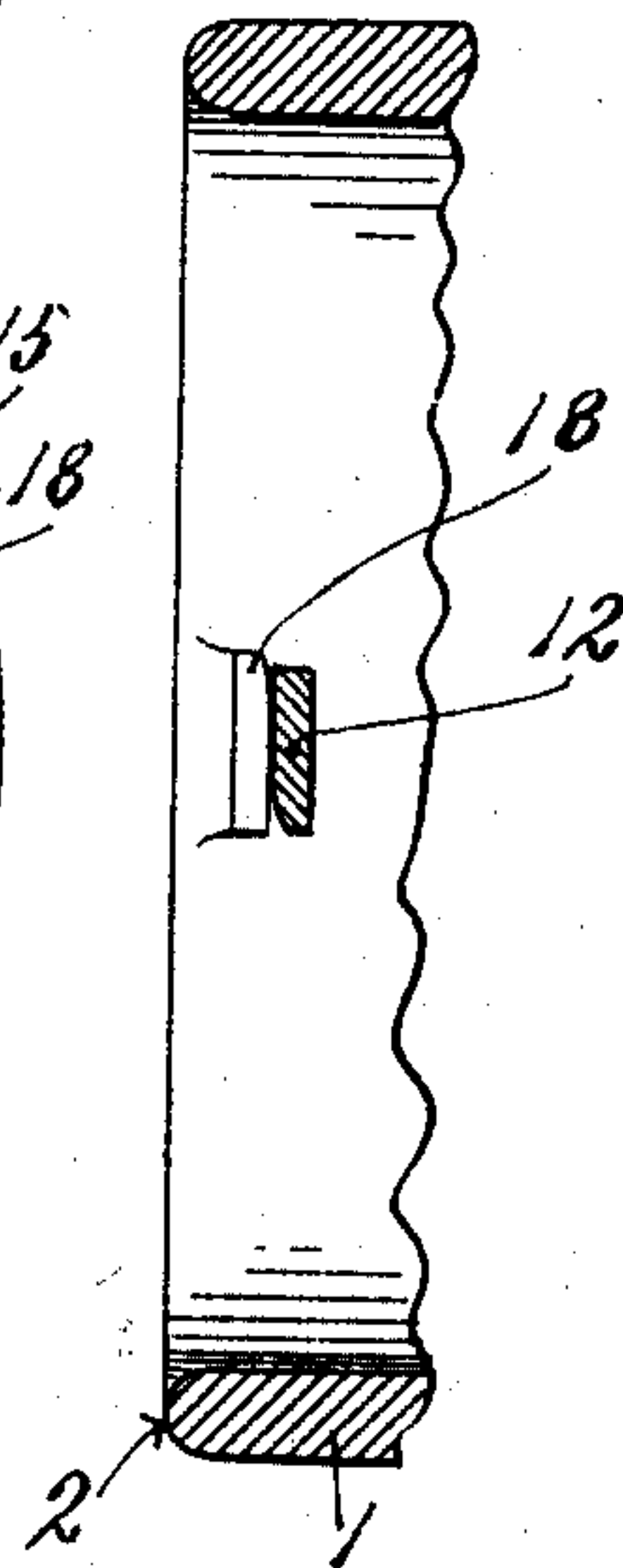


Fig. 7.

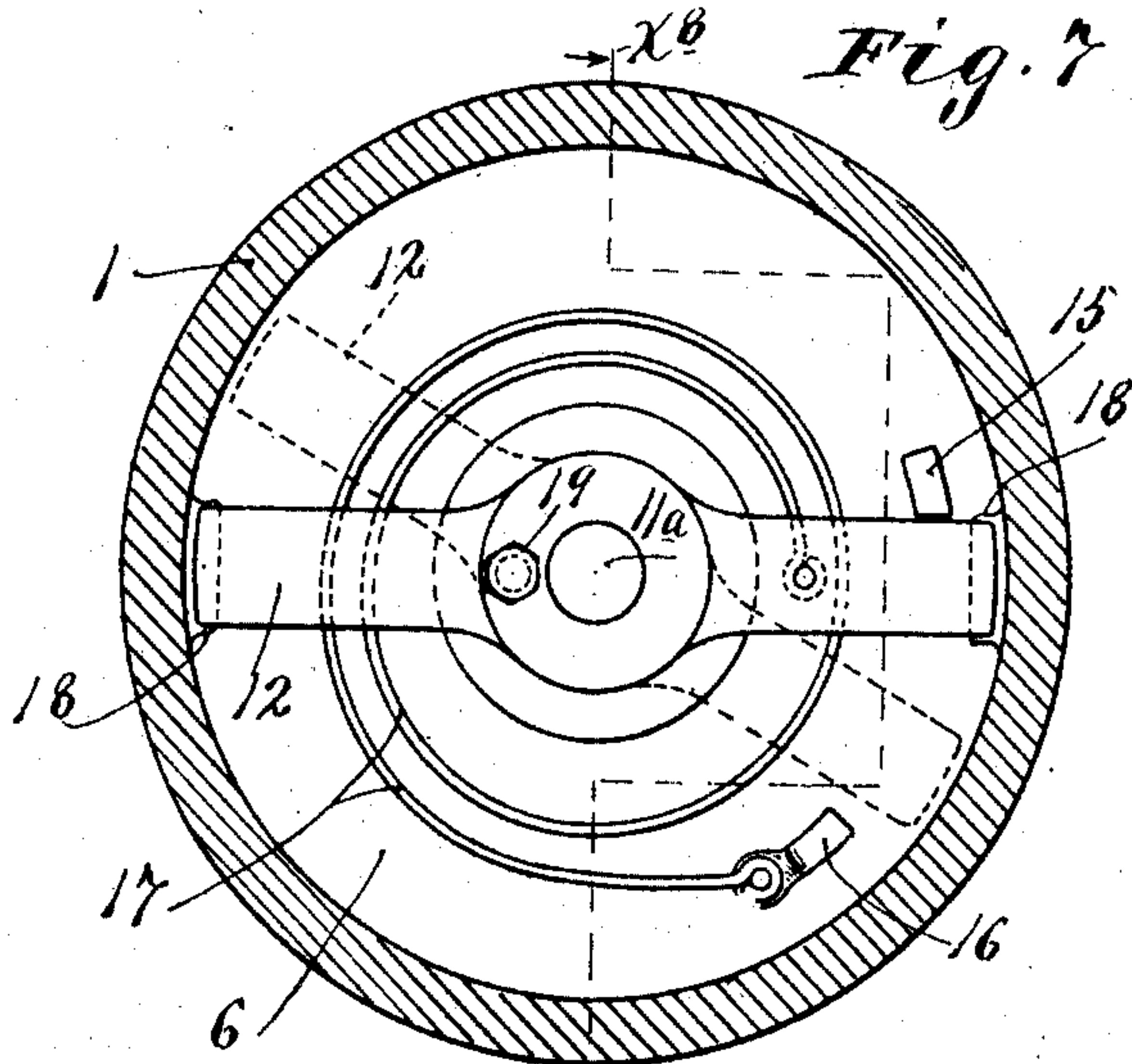
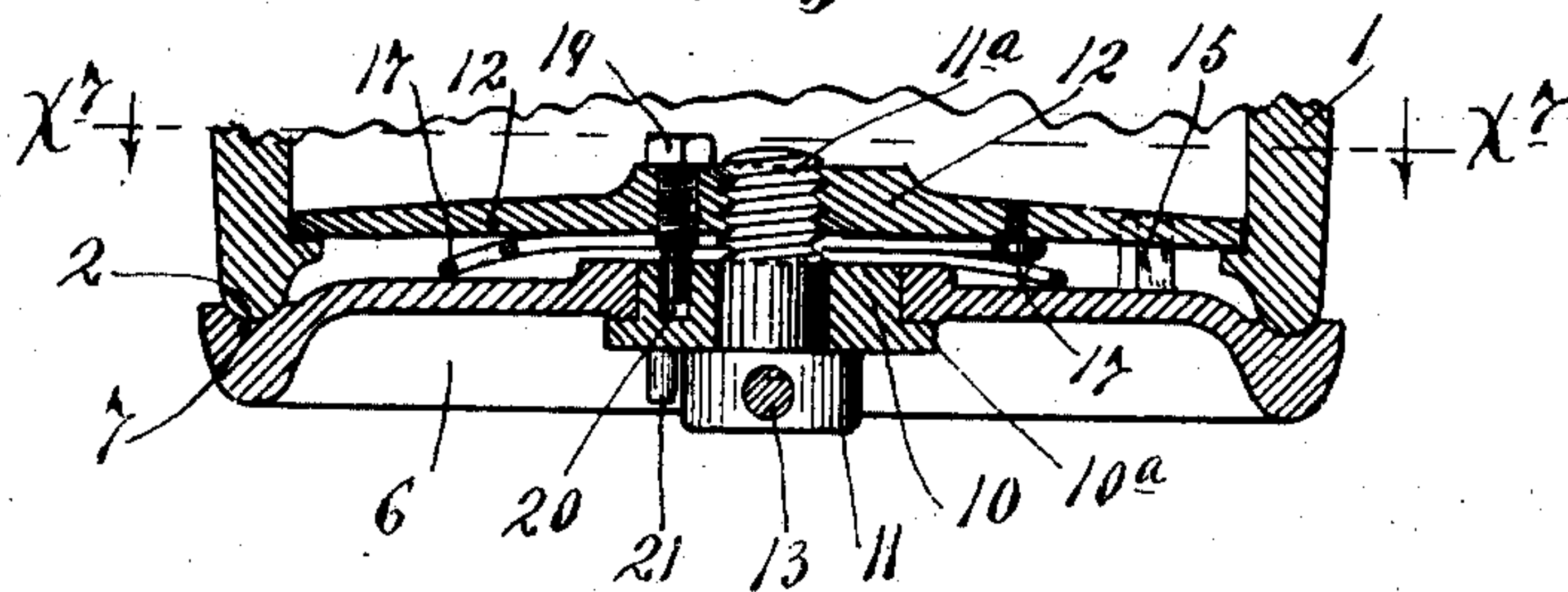


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES C. BARCLAY AND FREDERICK HACHMANN, OF ST. PAUL, MINNESOTA, ASSIGNORS
TO BARCLAY MANUFACTURING CO., OF ST. PAUL, MINNESOTA, A CORPORATION OF
MINNESOTA.

CAR-AXLE-BOX LID.

No. 879,137.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed April 24, 1907. Serial No. 370,022.

To all whom it may concern:

Be it known that we, CHARLES C. BARCLAY and FREDERICK HACHMANN, citizens of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Car-Axle-Box Lids; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has for its object to provide an improved car axle box lid, and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention in its preferred form is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation, with some parts broken away, showing a car axle box equipped with a lid designed in accordance with our invention. Fig. 2 is a front elevation of the parts shown in Fig. 1. Fig. 3 is a vertical section taken approximately on the line $x^3 x^3$ of Fig. 2. Fig. 4 is a fragmentary view on the same line as Fig. 3, showing the lid in a raised position. Fig. 5 is an inside elevation of the lid, some parts being broken away. Fig. 6 is a horizontal section taken approximately on the line $x^6 x^6$ of Fig. 2. Fig. 7 is a section on the line $x^7 x^7$ of Fig. 6; and Fig. 8 is a detail in section taken on the irregular line $x^8 x^8$ of Fig. 7, some parts being broken away.

The car axle box 1 is provided with an annular lid seat 2, the rim of which is preferably rounded in cross section, as best shown in Figs. 3, 4 and 6. Above the lid seat 2, the box is formed with a pair of heavy bearing lugs 3 in which the ends of a short shaft 4 are rigidly secured. The intermediate portion of this shaft 4 is angular and, as shown, is reduced and formed on its upper portion with a lock flange or key like projection 5.

The lid 6 is of disk like form and is provided in its inner face near its outer edge with an annular groove 7 that is adapted to closely fit the annular rim seat 2 of the box. This lid 6 is shown as provided with a pair of bearing lugs 8 that work pivotally on the hinge bolt 4 between the box lugs 3. Also these lugs 8 in their bolt seats are formed with lock notches or lock flange seats 9 which

when the lid is raised as shown in Fig. 4, are adapted to engage the lock rib 5 of the bolt 4, and thereby support the said lid in its open position. A rotary hub 10 is rotatively seated in the central portion of the lid 6, the same, as shown, having an exterior flange 10^a that limits its inward movement. A short heavy clamping bolt 11 is rotatively mounted in the hub 10 and at its inwardly projecting end has threaded engagement at 11^a with the intermediate portion of the lock bar 12. At its outer end, the clamping bolt 11 is provided with a large head through which a combined handpiece and latch 13 works, with freedom for oscillatory and endwise movements. This latch or lock bolt 13 is provided with a curved handpiece 13^a, and the downwardly projecting end thereof is adapted to be engaged with any one of several lock notches 14 formed in the lower portion of the outer rim of the lid 6. The bottoms of these lock notches 14 (see Fig. 3) are inclined with respect to the plane of the lid and the depending end of the latch 13 is beveled at 13^b for engagement with the said inclined bottoms. With this construction, when the latch is turned parallel to the plane of the lid and is then slid downward into engagement with one or the other of the notches 14, the said latch will be held against oscillatory movements on the axis of the clamping bolt 11 and will also be held against rotary movements on its own axis, thus serving to normally lock the latch in its operative position shown in Figs. 2 and 3.

The lock bar 12 is adapted to vibrate between stop lugs 15 and 16 on the inner surface of the lid 6, and it is put under yielding strain to maintain engagement with the said lug 15 by means of a spiral spring 17, one end of which is attached to said bar, and the other end of which, as shown, is attached to the said lug 16. The ends of the said lock bar 12 are adapted to be engaged with lock lugs or shoulders 18 formed on the interior of the box adjacent to the lid seat 2. The faces of these lugs 18, as well as the engaging end portions of the lock bar 12, are preferably rounded slightly, as shown in Fig. 8, to facilitate their engagement.

The lock bar 12 is caused to rotate with the hub 10, as shown, by means of a screw 19, the reduced end of which works telescopically within a seat 20 of said hub 10, so that this connection permits a lateral movement of

the lock bar 12 with respect to said hub and with respect to the lid 6. A driving projection in the form of a pin 21 is secured to the outer face of the hub 10.

5 There is sufficient play between the hinge bolt 4 and the seats therefor in the lid lugs 8 to permit the lid always to be tightly seated against the annular seat 2 of the box, and also to permit the notches 9 to be readily
10 engaged with and disengaged from the lock flange 5 of said bolt. To release the said lock notches 9 from the lock flange 5 when the lid is held in its upper position, as shown in Fig. 4, it is only necessary to press lat-
15 erally upward on said lid. When the combined latch and handpiece 13—13^a is raised and turned outward, the clamping bolt 11 may be rotated thereby. From the position shown in Fig. 2, the said latch may be oscil-
20 lated in the direction of the movements of the hands of a clock far enough to release the ends of the lock bar 12 from the cooperating lock lugs 18, and under further movement in the same direction the said latch will strike
25 the pin 21 of the rotary hub or tumbler 10 and cause the same, and, hence, the lock bar 12 to oscillate with the said clamping screw. By this movement, the ends of the clamping bar 12 are thus relieved from pressure against
30 the lugs 18 and are then turned out of alignment with the said lugs, so that the lid may be swung outward into an open position. This oscillatory movement of the latch bar 12 is, of course, accomplished against the
35 tension of the spring 17.

In closing the lid, the latch, the hub, the clamping bolt and the lock bar must, of course, be moved into the position just noted, so that the ends of the said lock bar will pass
40 inward clear of the lock lugs 18; and then when the lid has been seated the lock bar by means of the combined latch and handpiece should be moved in a direction reverse from that indicated by the arrow marked on Fig. 2,
45 so as to carry the ends of the lock bar 12 into engagement with the inner surface of the lock lugs 18, as shown in Figs. 7 and 8. The stop lug 15 limits the movement of the lock bar in the direction just stated to the said
50 position shown in Figs. 7 and 8, but the clamping screw 11 must be moved further in the same direction so as to draw the lock bar laterally toward the lid, or otherwise stated, the lid laterally towards the lock bar,
55 and thereby tightly force the lid against its annular seat 2 and the ends of the said lock bar against the said lock lugs 18. As already indicated, the tension of the spring 17 is in the proper direction to prevent the lock bar
60 from being jarred or otherwise accidentally moved from its locked engagement with the lugs 18. Nevertheless, any such accidental movement of the lock bar from its operative position is positively prevented by the latch
65 13 when the latter is engaged with one or the

other of the notches 14, as shown in Figs. 2 and 3. The several notches 14 are provided so that the said latch may be secured in any one of several positions as may be required to clamp the lid with the proper pressure
70 against its seat on the box.

By reference to Figs. 3 and 6 it will be noted that the spring 17 is of such form that it also acts to press the lock bar laterally away from the lid and thus hold the head of the clamp-
75 ing bolt 11 against the outer face of the hub 10, and the flange 10^a of said hub against the outer face of the lid. By reference to the same views it will also be noted that the lid inward of its rim is dished or set inward of
80 the outer portion of the said rim, so that the projecting portions of the hub 10, of the clamping screw 11 and of the combined latch and handpiece 13 13^a when the lid is locked are contained nearly or entirely within the
85 limits of space occupied by the lid and, hence, are not exposed where they are liable to get knocked off.

Form the foregoing description and statements made, it will be seen that the cooperating locking elements for securing the said lid
90 to the box are located within the box when the lid is closed, but are provided with operating connections which extend to the exterior of the box, so they may be moved into and
95 out of cooperative relation from the exterior of the box. This is a very important feature and is believed to be broadly new.

What we claim is:

1. The combination with a box and a lid
100 hinged thereto, of a lock bar intermediately pivoted to said lid on the inner side thereof and engageable with cooperating parts on the interior of the box, a clamping bolt extending through said lid and having threaded
105 engagement with said lock bar and provided at its outer end with a handpiece by means of which it may be oscillated, substantially as described.

2. The combination with a box and a lid
110 hinged thereto, of a lock carried by the lid at the inner side thereof and engageable with cooperating parts on the interior of the box, a lock operating connection extending through said lid to the exterior of the box, and a latch
115 for holding said lock actuating connection against movement and the said lock in an operative position, substantially as described.

3. The combination with a box and a lid,
120 of a hub rotatively mounted in said lid, a clamping bolt rotatively mounted in said hub and extending through said lid, said bolt having a threaded inner end and a handpiece at its outer end, a lock bar engaged by the threaded end of said clamping bolt and
125 engageable with cooperating parts on the interior of the box, a connection causing said lock bar to rotate with said hub permitting the same to move laterally with respect thereto, and a connection between said
130

clamping bolt and said hub permitting limited movement of said bolt with respect to said hub, but causing the two to rotate together under extreme movement of said bolt, substantially as described.

4. The combination with a box and a lid, of a hub rotatively mounted in said lid, a clamping bolt rotatively mounted in said hub and extending through said lid, said bolt having a threaded inner end, a lock bar, the intermediate portion of which is engaged by the threaded end of said clamping bolt, and the free ends of which are engageable with coöperating parts on the interior of the box under oscillatory movement of said lock bar, a connection causing said lock bar to rotate with said hub but permitting the same to move laterally with respect thereto, a connection between said bolt and hub permitting limited rotary movement of said bolt with respect to said hub, but causing the two to rotate together under extreme movement of the bolt, and a combined handpiece and latch mounted for oscillatory and sliding movements in the outer end of said clamping bolt and engageable with coöperating parts on the exterior of said lid for locking said clamping bolt against rotation, substantially as described.

5. The combination with a box having a lid seat and internal lock lugs, of a lid hinged to said box, an oscillatory lock bar, the ends of which are engageable with said lock lugs, a clamping bolt carried by and ex-

tended through said lid and having a threaded end engaging the intermediate portion of said lock bar, and a combined handpiece and latch rotatively and slidably mounted in the outer end of said clamping bolt, and having a flattened depending end engageable with seats on the exterior lower portion of said lid, substantially as described.

6. The combination with a box and a lid hinged thereto, said box having internal lock lugs adjacent to the lid seat, of a hub rotatively mounted in said lid, a clamping bolt rotatively mounted in said hub, an oscillatory lock bar having threaded engagement with the inner end of said clamping bolt and engageable with and disengageable from said lock lugs by oscillatory movement, a connection causing said lock bar to oscillate with said hub but permitting the same to move laterally with respect thereto, a spring applied to said lid and operative on said lock bar with a force tending to hold the same alined with said lock lugs, and means for oscillating said lock bolt and hub from the exterior of the box when the lid is closed, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES C. BARCLAY.
FREDERICK HACHMANN.

Witnesses:

C. M. STAUFFER,
C. C. KINNEY.